

Green Island Recreation Area

incorporating Green Island National Park, part of the Cairns Marine Park (State) and part of the Great Barrier Reef Marine Park (Commonwealth)

and Green Island National Park

Management Plans



December 2003



Queensland Government
Environmental Protection Agency
Queensland Parks and Wildlife Service

Summary

These management plans provide the framework and guidelines on how Green Island Recreation Area and Green Island National Park will be managed. It sets out the considerations, outcomes and strategies that are proposed to form the basis on which day-to-day management decisions are made.

This plan was prepared in 2003 and will be reviewed within the statutory timelines required by the *Nature Conservation Act 1992* (10 years) and the *Recreation Areas Management Act 1988* (under review). For further information on this plan or the planning process please contact the Queensland Parks and Wildlife Service northern regional office (Cairns) on (07) 4046 6601.

This management plan was prepared by Environmental Protection Agency staff, through the Queensland Parks and Wildlife Service. The principal author was Roland Mau. Thanks are due to those groups and individuals who made submissions in response to the draft plan, in particular the Green Island and Reef Advisory Committee which provided guidance and comment for the preparation of this document.

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Abbreviations and acronyms

CAPOM	Cairns Area Plan of Management
CCC	Cairns City Council
CPA	Cairns Port Authority
DP	District plans
DCP	Development control plan
QPWS	Queensland Parks and Wildlife Service
the Service	Queensland Parks and Wildlife Service
NR&M	Department of Natural Resources and Mines
DPI	Department of Primary Industries
GBRMPA	Great Barrier Reef Marine Park Authority
GIRAC	Green Island and Reef Advisory Committee
RAM	Recreation Areas Management

Definitions

Ecological Sustainability	Ecological sustainability is defined in this plan as the use of natural resources within the Green Island Recreation Area in accordance with ecological sustainable development principles, and in particular the principle that decision-making processes should effectively integrate long and short- term economic, environmental, social and equity considerations (Department of Primary Industries, 1994).
Natural values	Are those values associated with the landforms, flora, fauna, air and water that comprise the Green Island Recreation Area.
Cultural values	Those values associated with past and present use of the Green Island Recreation Area by Indigenous and non-Indigenous people.
Scenic values	Those visual values deriving from the natural and built surroundings of the Green Island and Reef Recreation Area.
Low-impact recreation activities	Recreation activities that do not adversely affect the natural or cultural values of the Green Island Recreation Area.

1. Introduction

1.1 About this document

This document contains management plans for Green Island Recreation Area (see section 4) and Green Island National Park (see section 5). Information about the overall area has been combined at the beginning of the document (see section 1 and 2). A bibliography and relevant appendices are also included.

The document has been structured in this way in order to meet differing requirements for management plans in the *Recreation Areas Management Act 1988* (for the recreation area) and the *Nature Conservation Act 1992* (for the national park).

The plan for the recreation area replaces the 1995 draft Green Island and Reef Management Plan prepared under the *Recreation Areas Management Act 1988*.

Despite its small size, management of Green Island is complex due to the various legislative obligations and agencies' roles. This plan provides direction to the various agencies so that management of the site is carried out in a co-ordinated and complementary manner.

In section 1 of this plan, the Green Island Recreation Area is described and placed into a regional context. A vision statement and management objectives define the management purpose and proposed future direction. This is followed by a brief outline of the planning process.

Section 2 describes the management obligations of the Recreation Area Management Board, government departments and their relevant legislation and planning instruments, as well as stakeholder involvement in management. In section 3, the key values of the recreation area are established.

In section 4, the strategies for management of the recreation area are detailed. Strategies for Green Island National Park are presented separately in section 5.

1.2 Green Island Recreation Area

Green Island, a 12ha forested coral cay situated atop a mid-shelf platform reef, is located 27km north-east of Cairns at a latitude of 16°46' S and 145°58' E (figure 1). The recreation area includes the Green Island National Park (7.93ha), public esplanade (1.5ha), jetty, navigation channel and mooring area, and the surrounding State and Commonwealth marine parks to a distance of 1.6 kilometres beyond the reef edge (as delineated from the Australia 1: 100 000 Topographic Survey Series R631, "Cairns").

The Green Island resort and associated facilities (about 1.8ha), Marineland Melanesia (about 4200sqm), and DPI research station are excluded from the recreation area. These areas are subject to lease conditions and to the Green Island Development Control Plan (DCP).

1.3 Regional context

Green Island is world-class tourist attraction and a key element of the north Queensland tourism industry. Its proximity to Cairns and easy access by boat provides visitors to the region with a unique opportunity to experience a forested coral cay.

It is one of the most popular destinations on the Great Barrier Reef (GBR). Green Island has, at times, experienced visitation rates equivalent to 35 percent of the total visitation to the Cairns Marine Park (Coopers & Lybrand Consultants, 1996).

In 1937 Green Island was the first island national park in Queensland. At that time, the surrounding foreshore and reef within one mile of the low water mark became the first protected marine area. The remainder of the surrounding reef was declared a marine national park in 1974, covering 3000ha and extending 1.6km beyond the reef platform area. This area was amalgamated into the Cairns Marine Park (State) in 1989. The public areas of Green Island and reef were declared a recreation area in 1990.

Green Island is situated within the Great Barrier Reef (GBR) Marine Park. The GBR Marine Park was established under Commonwealth legislation in 1975. In 1981, the extraordinary value of the GBR was further recognised with the listing of an area slightly larger than the existing Great Barrier Reef Marine Park as a World Heritage Area.

1.4 Vision statement

The Green Island Recreation Area will continue to be co-operatively managed to ensure ecologically sustainable use, where the local community and visitors can experience the unique natural, cultural, scenic and recreational values both now and in the future.

It will be an area where:

- **the values of the Great Barrier Reef World Heritage Area and Marine Park, the Green Island National Park and the Cairns Marine Park are protected and presented; and**
- **a diversity of low-impact recreation opportunities are provided for current and future generations to appreciate and enjoy.**

1.5 Management objectives

In keeping with the objectives of the *Recreation Area Management Act 1988* (RAM Act), and the various obligations of the Commonwealth, State and local governments in relation to management of the Green Island Recreation Area, the following management objectives have been developed:

- (i) Green Island Recreation Area will be managed in accordance with the principles of ecological sustainability;
- (ii) opportunities will be provided to all sectors of the public for high quality recreational and educational experiences based on the natural and cultural values of Green Island and its reef;
- (iii) natural ecosystems will be protected;
- (iv) natural character and amenity will be maintained and enhanced; and
- (v) cultural heritage values will be protected and presented.

Green Island Recreation Area will continue to accommodate large numbers of recreational visitors and is likely to remain one of the most intensively used sites on the Great Barrier Reef.

The challenge is to ensure that levels and types of use are managed in a way that ensures the integrity of the site's natural and cultural values, whilst allowing for reasonable use.

1.6 Planning process

Under section 20(1A) of the RAM Act, a recreation area management plan must take into account the objectives of the proprietors (landholders), and the conservation, recreation, education and production values of that recreation area. Opportunities are provided for stakeholders, traditional custodians and the public to be involved in and consulted about planning and management of the area. The Green Island and Reef Advisory Committee which includes representatives from QPWS, GBRMPA, CCC, CPA, NR&M, native title claimants and tourism operators, has been established for this purpose and has been closely involved in all stages of the planning process.

The general community and key stakeholder groups have been consulted on two occasions regarding the current planning process for the Green Island Recreation Area. Advertisements were placed in local newspapers in 1997, 1998 and 2001 advising the public that a management plan was being prepared and inviting submissions regarding management of the area. These comments have been considered in the preparation of this plan.

2. Management obligations

2.1 Introduction

Commonwealth, State and local governments and leaseholders manage the Green Island and adjacent reefs subject to a range of obligations, in particular with respect to the levels and types of activities conducted there. Management jurisdictions and the obligations of various agencies are outlined below.

2.2 Recreation area management

The Green Island Recreation Area was declared in March 1990 under the *Recreation Areas Management Act 1988*.

The Green Island Recreation Area is shown on figure 1. The objectives of the RAM Act are to provide for the establishment of a system of recreation areas throughout Queensland and in relation to those recreation areas:

- (a) to provide, co-ordinate, integrate and improve recreational planning, recreational facilities and recreation management on recreation areas taking into account their conservation, recreation, education and production values and the interests of the proprietors;
- (b) to provide for joint management of any recreation area where necessary or desirable without derogating from the rights, duties, powers and responsibilities of –
 - (i) the chief executive of the department that deals with matters arising under the *Nature Conservation Act 1992*; or
 - (ii) the chief executive of the department responsible for the administration of the *Forestry Act 1959*; or
 - (iii) any other proprietor in relation to a recreation area;
- (c) to provide for the collection of funds from the users or intending users of the recreational facilities and services provided within recreation areas.

The Recreation Areas Management Act establishes the Recreation Areas Management Authority and the Recreation Areas Management Board (the RAM Board). *The Recreation Areas Management Act 1988* is administered by the Authority, and by the Board subject to the Authority.

The RAM Board has established the Green Island and Reef Advisory Committee (GIRAC). The role of GIRAC is to provide advice to the Board on management-related issues and initiatives.

2.3 National park and marine parks management

Green Island National Park covers part of the island above the high water mark (HWM). The Cairns Marine Park (State) covers tidal waters around the island below the HWM. The Great Barrier Reef Marine Park overlaps the State Marine Park and extends outward from the low water mark surrounding Green Island (figure 1).

The Queensland Parks and Wildlife Service is responsible for the overall management of the recreation area, national park and surrounding State marine park under the RAM Act, *Nature Conservation Act 1992* and the *Marine Parks Act 1982*, respectively. The Great Barrier Reef Marine Park Authority (GBRMPA) is responsible for the management of the Great Barrier Reef Marine Park (Commonwealth) under the *Great Barrier Reef Marine Park Act 1975*, while QPWS is responsible for the day-to-day management of the GBRMP.

An on-site QPWS ranger carries out day-to-day management of the recreation area, national park and marine parks.

The Service's obligations under section 17 of the *Nature Conservation Act 1992* are to:

- i. provide, to the greatest possible extent, for the permanent preservation of the area's natural condition and the protection of the area's cultural resources and values; and
- ii. present the area's cultural and natural resources and their values; and
- iii. ensure that the only use of the island is nature-based and ecologically sustainable.

The principle in (i) above is regarded as the cardinal principle of management.

Zoning plans have been prepared for the Cairns Marine Park and also the Cairns Section of the GBRMP. These zoning plans indicate the types of activities which may be undertaken in each zone. The zoning of the State and Commonwealth Marine Park immediately surrounding Green Island is National Park Zone.

The objectives of the National Park Zone are:

- i. to provide for the protection of areas of the Great Barrier Reef Marine Park in a natural state while allowing the public to appreciate and enjoy the relatively undisturbed nature of those areas; and
- ii. to provide for traditional fishing, hunting and gathering to continue to be undertaken by traditional inhabitants.

The Cairns Area Plan of Management (CAPOM) is a statutory document prepared by the Great Barrier Reef Marine Park Authority in June 1998 (and amended in June 2002) to protect and conserve identified values of the offshore Cairns Area, including the waters surrounding Green Island. The CAPOM is in addition to the Cairns Section Zoning Plan provisions and is incorporated where relevant into this plan.

2.4 Cairns City Council

A development control plan (DCP) was gazetted in 1997 for Green Island as a part of the Cairns City Council Planning Scheme under the *Local Government (Planning and Environment) Act 1990*. Under the DCP, any proposed built structures or facilities to be upgraded, constructed or installed, will be designed to minimise impacts on the natural character of the site. All future works on the island must be in accordance with the DCP and be assessed in accordance with Cairns City Council approvals and other development assessment.

In addition to enforcing the DCP, the Cairns City Council has responsibility to manage the esplanade as a public use area. Under agreement, the QPWS undertakes day-to-day management of the esplanade. The esplanade is situated on the western end of Green Island, and extends from the high water mark to adjacent leases, effectively forming a crescent shaped public use zone near the jetty.

With the introduction of the *Integrated Planning Act 1997*, at some point in the future DCPs will be superseded by district plans (DP). Once the changes have come into effect, all reference to "DCP" should be read as "DP".

2.5 Cairns Port Authority

Green Island jetty is owned by Queensland Transport while responsibility for controlling and managing the facility has been vested in the Cairns Port Authority (CPA) by Order in Council. Use of the jetty on a day-to-day basis is controlled by CPA's piermaster based in Cairns.

2.6 Leaseholders

While this management plan does not directly govern activities which occur on the lease areas of the island, lessees have agreed to manage the leased land in accordance with the standards laid down in this management plan. In the interests of ensuring coordinated recreation management, the lessees have been actively involved in the preparation of this management plan as members of GIRAC.

This plan makes recommendations on activities undertaken in the lease areas to enhance the high natural and recreational values of the site. It also makes reference to activities which may be included in either lease conditions which will be negotiated with the agreement of the owner and respective lessees, prior to lease renewal or through an agreed code of conduct that will be negotiated with the lessees.

3. Values

3.1 World Heritage

The Great Barrier Reef was accepted for inclusion on the World Heritage List in 1981 after meeting all four of the natural heritage criteria. These criteria focus upon geological phenomena, ecological and biological processes, aesthetic and natural beauty, and biological diversity. The nomination concludes that 'the area nominated is of outstanding universal value on the basis of its natural heritage' (GBRMPA 1981:5-6).

Green Island is part of the Great Barrier Reef World Heritage Area. Management of Green Island and reef as a recreation area provides an opportunity to meet the obligations of a World Heritage site, namely, the protection, conservation and presentation of the Great Barrier Reef World Heritage Area, and its transmission to future generations.

3.2 Natural values

Terrestrial flora

Green Island is the most floristically diverse of all coral cays in the Cairns and Central sections of the Great Barrier Reef Marine Park.

Green Island supports a closed vine forest which is similar in species composition to vine forests found on the adjacent mainland, with 134 plant species identified. The complexity of the vegetation can be attributed for the most part to birds, in particular the pied imperial pigeon which regularly transports seeds and nutrients from the mainland, thus enriching species diversity. Accumulated leaf litter also provides a barrier to water loss and recharges soil nutrients.

Terrestrial fauna

The native fauna present on Green Island is typical of that found on forested coral cays on inshore reefs north of Cairns. Thirty eight species of land and sea birds use the cay, seven for breeding.

The most significant land bird using the island is the migratory pied imperial pigeon which nests on the island between October and March. Birds of conservation significance under the *Nature Conservation (Wildlife) Regulation 1994* include the beach stone curlew *Esacus neglectus* (vulnerable) and sooty oystercatcher *Haematopus fuliginosus* (rare). Other bird species commonly recorded include the pied oystercatcher *Haematopus longirostris*, bridled tern *Sterna anaethetus*, eastern reef egret *Egretta sacra*, whimbrel *Numenius phaeopus*, osprey *Pandion haliaetus*, lesser frigatebird *Fregata ariel*, and white-bellied sea-eagle *Haliaeetus leucogaster*. In addition, the brightly coloured magnificent fruit-dove *Ptilinopus magnificus*, pheasant coucal *Centropus phasianinus* and rose crowned fruit-dove *Ptilinopus regina* are common sights on the Island. A small colony of spectacled fruit bats also occurs periodically on the island.

Marine biota

Green Island reef (about 710ha) contains an almost continuous belt of a diverse range of coral reef species. Crown-of-thorns starfish *Acanthaster planci* outbreaks and recent incidents of coral bleaching have had a significantly detrimental impact on the hard coral communities of Green Island Reef.

The giant clam *Tridacna gigas* and giant triton shell *Charonia tritonis*, both listed as protected species under the *Great Barrier Reef Marine Park Regulations*, inhabit the coral reef.

Green and hawksbill turtles use the reef as feeding grounds throughout the year. Fauna of conservation significance listed as 'vulnerable' under the *Nature Conservation (Wildlife) Regulation 1994* include the green turtle *Chelonia mydas*, hawksbill turtle *Eretmochelys imbricata*, and dugong (*Dugong dugon*). The green and hawksbill turtle are also listed as 'vulnerable' under the Commonwealth *Endangered Species Protection Act 1992*. At an international level, the International Union for the Conservation of Nature (IUCN) has listed the dugong as vulnerable, the green turtle as 'endangered', and the hawksbill turtle as 'critically endangered'. The conservation status of these aforementioned species makes conservation management a high priority.

Baxter (1990) notes that seagrass beds are found throughout Green Island reef with six seagrass species identified. The most prominent beds occur on the inshore flat to the north and north-west of Green Island, with dominant species being *Halodule uninervis* and *Cymocea serrulata*. Many species of blue-green and coralline algae are associated with these seagrasses. Low-density seagrass beds are widespread over much of the remainder of the reef flat. Seagrass meadows form important feeding grounds for turtles, dugongs, shrimps and commercially important penaeid prawns.

Ground water

There is no sustainable freshwater supply on the island. The soils on the island consist of a calcareous sandy loam atop a 10 to 20-metre porous layer of dead coral and algae that overlies a reasonably consolidated older reef surface. The presence of this underlying older reef surface allows for a shallow lens of brackish ground water to accumulate following rainfall.

The infrastructure on the island has been designed to enable the maximum amount of ground water recharge. The resort buildings are elevated on piles, the roof structure has no guttering and well designed board walks ensure minimal compaction of tracks and other walkway areas. Lease conditions specify that no ground water whatsoever is to be extracted from the Green Island aquifer. It is crucial for the survival and maintenance of the dense forest that sufficient fresh water of good quality is available to meet transpiration requirements.

3.3 Cultural values

While some aspects of the Indigenous and European historical values of Green Island are documented, its cultural significance has not been formally assessed. Indigenous history

Green Island and its associated reef and waters are of cultural significance for the traditional owners of the area, the Gungandji and the Mandingalbay Yidinji Aboriginal people. The site is within the traditional sea country of these Aboriginal people and holds traditional and contemporary significance.

Green Island is known by the Gungandji people as Wunyami, meaning place of haunted spirits. The Gungandji associate Green Island and its reef with various stories, such as the telling of a fight between a turtle and a crab which resulted in the turtle being adapted for life in the ocean. The island was also used as an initiation place for boys in their transition to manhood.

The reef was, and still is, a significant resource base for the Indigenous people from Yarrabah, who hunt, fish and collect there on a seasonal basis. Marine park zoning provisions allow for these activities to occur under relevant permits assessed and issued by the Service and the GBRMPA.

Non-Indigenous history

The island was charted by Captain James Cook on June 10, 1770 but further non-Indigenous use of the site did not occur until the second half of the 19th century, when it was used as a base for beche-de-mer (sea cucumber) fishermen.

It has been an important holiday destination for locals since the late 19th century. It was proclaimed a recreation reserve under Cairns Town Council control in 1906, during which time the first jetty was constructed. A commercial passenger ferry service commenced in 1924. Green Island was declared a fauna sanctuary in 1935.

In 1937, Green Island was the first island national park in Australia. At that time, Hayles Ltd commenced a glass-bottomed boat service at Green Island, reputed to be a world first. Resort accommodation was constructed in the early 1940s. The underwater observatory adjoining the jetty was opened in 1955 and the original structure remains in use today. Tourist leases were first granted to Hayles Ltd in 1961. The present resort was completed in 1994.

3.4 Education and scientific values

Education and interpretation

The site has high educational and interpretive values owing to its ease of access and diversity of habitats. The geological, biological, cultural and scenic values of the site provide excellent opportunities for reef-based and island-based educational programs, particularly for secondary and tertiary students. The close proximity of the site to Cairns, coupled with well-appointed public facilities, makes this site ideal for day excursions.

The high level of visitation at the site also provides an opportunity for interpretation of the site's natural and cultural values.

Research and monitoring

The geological, biological, cultural and scenic values of the site provide ample opportunities for research. The Monkman Reef Research Station provides an excellent base from which researchers can operate.

Extensive monitoring of various aspects of the island and reef ecology have been undertaken at Green Island. These include projects on the crown of thorns starfish, turtles, hard and soft corals and other reef biota, seagrass, fish studies and terrestrial flora and fauna.

3.5 Recreation and tourism

Recreational opportunities

The major recreation value of the area lies in its outstanding beauty, natural setting, and easy access due to its close proximity to Cairns.

Visitors to the island can take advantage of a broad range of nature-based activities. They can choose to relax, sunbathe, swim, explore the island's forest on the walking track, or take advantage of a range of services offered by commercial operations including interpretive glass-bottom boat tours, snorkelling, scuba diving, surf-skiing, sailboarding, parasailing, and scenic flights.

The reef also provides a fair weather anchorage for recreational vessels and commercial fishing vessels. Fishing is not permitted on most of the reef due to marine park zoning restrictions.

Tourism

In 1992, tourism was estimated to contribute 25 percent of far north Queensland's \$3.4 billion Gross Regional Product. It was estimated that approximately 930,000 visitor days were spent in this region in 1994-95 (Coopers & Lybrand Consultants, 1996). The recreation opportunities and natural setting of Green Island are a major tourist drawcard. Between 1990-98, an average of 281,000 people visited Green Island annually (RAM data). Daily peaks have been as high as 1900 people. Due to this high level of visitation, Green Island is important to the regional economic base and is a significant recreation and tourism destination in the region.

Commercial operations

Commercial tourist operations on the island include the island resort with cafeteria, restaurant, shops and overnight accommodation; the underwater observatory; Marineland Melanesia; and various ancillary services including equipment hire and diving.

A resort has existed on the western end of Green Island since the 1940s. The resort was re-built by the Daikyo group of companies in 1994 and offers facilities and services for guests and day visitors including a dive shop, cafeteria, restaurant, boutiques and beach and in-water equipment hire. It also offers luxury overnight accommodation for a maximum of 90 guests.

Public amenities including toilets, freshwater showers and changerooms are situated on the resort lease. Public facilities found on the esplanade or within the national park include pathways, shaded seating, timber boardwalk, and educational, orientation and safety signage.

The underwater observatory opened in 1955 and is a significant tourist attraction. It was the first underwater observatory constructed in the world. To date, this structure has remained relatively unchanged.

The second tourist lease, known as Marineland Melanesia, accommodates marine zoological gardens, crocodiles, turtles and an extensive collection of cultural artefacts from Papua New Guinea and neighbouring Indo-Pacific countries.

4. Recreation area management plan

4.1 Introduction

Green Island Recreation Area is managed in accordance with the vision statement and management objectives indicated previously in sections 1.4 and 1.5, to conserve the area's key values (section 3).

Issues which need to be addressed by this plan to ensure that the Recreation Area is managed in an ecologically sustainable way include:

- the nature and level of various activities undertaken;
- levels of visitation;
- potential impacts associated with visitation, ie. waste management, water usage, etc.; and
- habitat protection and conservation.

The desired outcomes to be achieved in the management of the Recreation Area, and the strategies that will be used to achieve these outcomes are detailed below.

4.2 Cairns Area Plan of Management

In June 1998, the Cairns Area Plan of Management (CAPOM) was gazetted under the *Great Barrier Reef Marine Park Act 1975* and was amended in June 2002. This plan provides an additional level of protection for an area within the Cairns Section of the GBRMP and highly utilised sites such as the Green Island Reef Location.

The GBRMPA's overall intent in the CAPOM is to manage growth in use to reduce conflict and provide now and into the future for a range of opportunities consistent with nature conservation, scientific, cultural and world heritage values. The Authority intends to maintain a general opportunity to access and use Locations consistent with Zoning Plan requirements, but subject to requirements to protect values.

This plan must be read in conjunction with the CAPOM and the Cairns Section Zoning Plan, as amended from time to time. To the extent of any inconsistency, these statutory plans will prevail over the Green Island plan. CAPOM localities of Green Island Reef are shown in Figure 3.

The CAPOM identifies the Green Island location as a 'sensitive location'. Sensitive locations hold high nature conservation, cultural, heritage, scientific values or use opportunities.

The main provisions in the CAPOM as they relate to Green Island as a sensitive location are outlined in table 1 below.

Table 1: Green Island CAPOM provisions (see figure 3)

Green Island Reef CAPOM Provision	LOCALITY		
	1	2	3
Maximum group size of 60 people per vessel or aircraft (including crew)*	Yes	Yes	No
Maximum group size of 15 people per vessel or aircraft (including crew)*	No	No	Yes
Anchoring of vessels more than 35 metres in overall length	No	No	No
Anchoring within 50 metres of mooring	Yes	No	No
Motorised watersports	No	No	No

*NB: Tourism operations that meet eligibility criteria may be exempted from limits on the maximum number of people per vessel or aircraft providing that the number allowed does not exceed that permitted under existing permission.

Furthermore, the intensity of tourism will be managed at Green Island reef by limiting the number of vessels or aircraft operating tourism programs that can visit the Location on any one day. Tourism programs operating to Green Island reef are required to make a booking, with a limit of four vessels a day to access Green Island reef.

Tourism operators that meet eligibility criteria may be exempted from booking requirements and limits on the number of days Green Island reef localities may be entered, providing that the number of days allowed does not exceed that permitted under an existing permission. Tourism programs using aircraft will not be able to access a sensitive location without eligibility.

Finally, the CAPOM specifies limitation on the number of moorings, pontoons and installations of other structures at each Location. The intent of this strategy is to provide for a balanced combination of private and public access opportunities across the planning area and, as far as possible consistent with values, at each location and to protect natural scenery values.

Schedule 6 of the CAPOM allows 15 permitted moorings at Green Island locality 2, whereas the number of moorings at locality 1 is to be limited to "No increase above the number permitted on 22 June 1998".

4.3 Recreation management

Background

The Green Island Recreation Area has high national and international significance as a recreation and tourism destination. The focus for recreation and tourism should be on nature-based activities.

It is often more effective to manage recreation impacts through self-regulatory approaches. This involves the adaptation of business practices to satisfy environmental criteria. Codes of practice have so far been developed for the beach hire operation (appendix A), the helicopter operations (appendix B), and the seaplane operations (appendix C) at Green Island. Restrictions to recreational activities already in place are listed in appendix E.

Issues addressed in this plan to ensure the high quality of the area's recreation values are maintained, include:

- provision of high quality and diverse recreation opportunities with minimal impact on natural values;
- visitor safety; and
- education and interpretation.

Recreation opportunities

Resort upgrading between 1994 and 1996 has resulted in a high standard of facilities available for use by all island visitors including toilets, showers, change rooms, shaded seating areas and refreshment outlets. Visitor facilities and services must complement one another and their capacity and design must be adequate to accommodate the high volume of visitors. It is important that the types of facilities and services provided and their design, location and operation reflect the natural character and amenity of the site.

Desired outcome

Green Island continues to be a site of national and international significance for tourism.

Facilities provided enable the national and marine parks to be enjoyed by and presented to a large number of visitors, with minimum impact on natural values.

Proposed guidelines and actions

- *Facilities and activities which conflict with nature-based recreational experiences will be restricted to the leased areas of the island.*
- *QPWS will conduct a visitor survey to determine satisfaction with available facilities and activities. Findings will be used to review management guidelines and actions.*
- *QPWS will prepare and implement a long term works program to maintain and upgrade existing recreation area facilities as required, the preparation of the works program will be undertaken in consultation with CCC and NR&M when the esplanade is part of the program.*

Visitor numbers and commercial tourism

Since 1990, visitor numbers to the site have ranged from between 255,000 to 319,000 a year. Commercial operators carry the majority of visitors to the site and provide a range of services.

To cope with high rates of visitation, a range of initiatives including site hardening (tracks, boardwalk) and improved utilities and facilities have been put in place. However, given the site's small area and the desire to maintain its natural ecology, character and amenity, limits to use are considered necessary to conserve the desired social and environmental setting.

In general, limits to use are related to environmental and social carrying capacities. The environmental carrying capacity is determined by the physical characteristics of this site and the facilities used to mitigate impacts, whereas the social carrying capacity refers to the level of use beyond which visitors experiences are negatively affected due to perceptions of overcrowding.

Studies of visitor experience and the social carrying capacity of Green Island were carried out by an independent consultant in 1993 and 1996 (Beaumont, 1993 and 1996). These studies indicated that an acceptable daily limit on visitor numbers lies between 1200 and 1345, that is a visitor limit at which perceived crowding was not significant.

Nevertheless, permitted use levels were fixed in the 1995 draft management plan at a considerably higher capacity than those levels recommended by the consultant to accommodate use levels existing at that time. Although this has potential to permit overcrowding, the inherent latency (i.e., the difference between the maximum permitted use levels and the actual use) in the current use levels provide a buffer against this happening. The extent of the current latency is a matter of concern to operators wishing to gain access to the recreation area.

Maximum visitor numbers currently permitted for tourism operations to the site total 2240 passengers in any one day. Of these 2240 permitted visitors, 240 are allocated to roving (i.e., visit other sites as well) permit holders who visit this site infrequently. The remaining 2000 are distributed among five site-specific operators with permits to access Green Island Recreation Area daily for the transfer of passengers and other activities.

There are no limits on the number of visitors that may access the island by private vessels as long as the number of persons a vessel does not exceed 60 at localities 1 and 2, and 15 at locality 3. Current recreational use levels via private vessels are relatively low.

Desired outcome

Commercial tourism use of the site does not exceed levels which may impact on the natural or cultural values of the site.

A fair and equitable system for the allocation of commercial tourism operator access to Green Island Recreation Area is operational.

Proposed guidelines and actions

- *The cap of 2240 visitors a day for commercial tourism operator access to the Recreation Area will be retained.*
- *QPWS, in conjunction with GBRMPA and in consultation with stakeholders and other interest groups, will apply the provisions of the Tourism in Protected Areas initiative in establishing an appropriate and sustainable tourism allocation policy.*
- *QPWS will monitor visitor perceptions through surveys to ensure that management provisions maintain the desired visitor experiences. Findings may be used to review limits of use.*

Reef Activities Plan

Green Island Recreation Area is a high-use site and has a range of conflicting marine activities. The Reef Activities Plan (appendix D) specifies the types of activities and structures permitted in the Green Island Recreation Area and is complementary with the CAPOM. It provides a level of specific site zoning for marine activities not covered by the Commonwealth and State zoning plans.

The Reef Activities Plan is given effect by this management plan to:

- restrict recreational activities to designated portions of the reef;
- separate incompatible activities; and
- restrict activities which are unreasonably obtrusive.

Two reef activities precincts (recreation and conservation) are defined, which complement the CAPOM.

Desired outcome

Management of use reduces conflict and provides current and future opportunities consistent with nature conservation, scientific, cultural and world heritage values.

Proposed guidelines and actions

- *Separate conflicting activities and restrict activities which are unreasonably obtrusive to visitors via the Reef Activities Plan (appendix D) and Cairns Area Plan of Management.*

Vessel access

Maintenance of the jetty and management of access is the responsibility of the Cairns Port Authority. Small vessel access at the jetty has been improved during a recent jetty upgrade.

There is often sediment disturbance observed in the vicinity of the jetty from the movement of larger vessels. Re-suspended sediments can smother nearby corals.

Desired outcome

Green Island jetty provides suitable access to a range of vessel types and sizes. Re-suspension of sediments from vessel movement is minimised.

Proposed guidelines and actions

- QPWS in consultation with GIRAC, will develop a code of practice for vessels operating in the channel to minimise sediment disturbance.

Visitor safety

There have been several snorkelling-related drownings at Green Island in recent years. Most snorkelling activities in the area occur largely without supervision.

A number of risk management options for snorkeller safety have been developed by the QPWS, in conjunction with the GIRAC. The GIRAC agreed that the most practical option was for the Cairns City Council to contract a lifeguard service on behalf of the RAM Board.

Desired outcome

Risks to visitors are identified and minimised by determining measures that prevent harm occurring. All safety issues are addressed and dealt with in an efficient, co-operative, and expedient manner.

Proposed guidelines and actions

- CCC will contract a lifeguard service provider for Green Island on behalf of the RAM Board.
- GIRAC will ensure that visitor safety is addressed through interpretive and educational and other services and facilities.
- GIRAC and QPWS will ensure that companies which hire out in-water recreation equipment develop a code of conduct to maintain a reasonable standard of supervision of their clients.

Education and interpretation

Interpretive signs and guided walks enhance the recreational experiences of visitors. Existing interpretation services and facilities on Green Island include:

- information counter (resort);
- interpretive, regulatory and directional signs (QPWS and resort, 1996);
- visitor information sheet (in English) with self-guided walk and numbered stations (QPWS);
- guided walks and activities (resort and tour operator staff, QPWS staff);
- underwater observatory (resort);
- Marineland Melanesia (private); and
- ranger liaison with resort and tour operator staff (QPWS).

Several areas of interpretation are still considered deficient, namely:

- regulatory and values information for visitors whose first language is not English; and
- Indigenous and European values and perspectives of the island and reef.

Desired outcomes

Information for domestic and overseas visitors about the history, natural and cultural assets of the island is comprehensive and presented adequately. Traditional owners of the island are involved in all facets of educational and interpretive programs as appropriate. Interpretive signs do not interfere with the natural setting of the island.

Proposed guidelines and actions

- QPWS and Green Island Resort will investigate and implement the presentation of interpretive material in multilingual formats.

- QPWS will develop, establish, operate and maintain a specialized boardwalk presenting information to promote Indigenous and non-Indigenous cultural and environmental values past and present as well as World Heritage values.
- QPWS will investigate the possibilities for further presentation of Indigenous cultural values of the site through personal interpretation by traditional owners.

4.4 Natural resource management

The following section identifies strategies addressing recreation-related natural resource management issues in the recreation area. Natural resource management requirements related to management of the national park can be found in section 5.4.

Foreshore stabilisation and maintenance

Since the mid 1850s, foreshore erosion has presented an on-going threat to the island's infrastructure. Investigation of sediment movement suggests that Green Island has a tendency to fluctuate in form, with a cycle of about 30 years (Kulcher, 1979; Hurrell, 1999). Foreshore erosion is a natural consequence of the ongoing shoreline movements that are inherent with coral cays. A 230-metre seawall was constructed in 1993 on the western foreshore for the purpose of protecting lease areas and the esplanade from erosion.

However, erosion continues to present a problem. A recent QPWS internal report notes that "significant erosion has occurred at the northern end of the seawall annually since its completion. The erosion is so severe that, if left unattended, it may have the potential to undermine and induce failure of the seawall" (Hurrell, 1999).

In response to this ongoing erosion problem, QPWS has been conducting annual beach replenishment works since 1995. Beach replenishment works involve significant ongoing costs (about \$10,000 a year). A longer-term solution is therefore highly desirable.

QPWS has been conducting foreshore surveys at the western end of the island following construction of the seawall in 1994. Foreshore surveys will continue to be undertaken to monitor coastal processes of erosion and deposition. Data retrieved will be used to monitor the dynamic beach profile both in terms of sediment movement and volume of sediment within the active beach zone.

The Queensland Government Hydraulics Laboratory (QGHL) has undertaken a numerical and physical model study of the Green Island beach and seawall to assess long-term solutions to the problem of beach erosion and the resulting threat to the seawall stability.

Desired outcome

Erosion problems are managed with minimal costs and environmental impacts.

Proposed guidelines and actions

- Maintenance work at the seawall will be undertaken as required.
- Sand replenishment will continue to be undertaken at the sea wall as required.
- QPWS will monitor sand dynamics in relation to the sea wall.
- QPWS will review recommendations of the QGHL study and advise the RAM Board on preferred options.

Coral communities

The impact of crown-of-thorns starfish (COTS) infestations on coral communities and their subsequent recovery at Green Island has been well documented during a series of studies undertaken between 1982 and 1996. A recent survey found a considerable increase in the amount of dead standing coral as a result of COTS feeding activities (Fisk, 1998).

In general, Green Island coral communities display a high propensity to recover well from severe COTS impacts, but history has shown that the recovery time is usually in the order of 10 to 15 years. Further research may be required to investigate methods to accelerate the natural regeneration of coral cover at important tourism activity sites.

Desired outcome

The impact of crown-of-thorns starfish on the coral cover of commercially important sections of Green Island reef is minimised.

Proposed guidelines and actions

- QPWS and GBRMPA will facilitate the control of COTS outbreaks at high use sites through the permit process.
- QPWS will monitor the status of COTS and determine the impacts to coral regeneration and recruitment.

Turtle monitoring

Turtle research on the island attracts much visitor interest. Queensland turtle research (a QPWS program) has been carrying out turtle monitoring on Green Island since 1988. Tag return data from these surveys has provided significant information on migration patterns. It will also provide information on the physiological and reproductive conditions of turtles which use Green Island reef to forage, in comparison with data gathered from less impacted areas.

In 1998, the bio-electrical impedance technique was trialed on Green Island turtle populations. This non-invasive technique allows for the rapid assessment of the reproductive condition of the turtles and contribute directly to the understanding of the health of the population.

Desired Outcome

Turtle monitoring at Green Island forms an integral component in national turtle research.

Proposed guidelines and actions

- The Queensland turtle research program will continue to conduct turtle monitoring of green and hawksbill turtles.
- The RAM Board will provide ongoing support to the bio-electrical impedance assessment turtle study.

4.5 Plan implementation and monitoring

Background

A strategy is required which reviews both the adherence of management to guidelines and policies and the extent of achieving actions identified in this plan, and which identifies how effective guidelines and actions have been in achieving set objectives.

Performance indicators will need to be identified to allow for monitoring of plan implementation and to review the effectiveness of management strategies. A summary of guidelines and actions and performance indicators established in this plan is shown in table 2.

While research projects have provided valuable information on Green Island, there is a need for this information to be collated and summarised to provide future direction for monitoring of Green Island. In 1990, the Great Barrier Reef Marine Park Authority undertook an information review of Green Island (Baxter 1990). There is, however, a need for this review of current knowledge of Green Island and reef to be updated.

Desired outcomes

Guidelines and actions identified in this management plan are successfully implemented and monitored for their effectiveness in achieving the desired outcomes.

The information review undertaken by Baxter (1990) is updated to include new information on developments, visitor use, research recommendations and recommended future projects.

Proposed guidelines and actions

- Yearly operational plans will be prepared in accordance with the set priorities of this management plan.
- Implementation of proposed guidelines and actions will be monitored on an annual basis.
- QPWS will commission an update of the Green Island Information Review (Baxter 1990).

Table 2: Green Island Recreation Area management plan implementation and monitoring details (Note: Priority 1 – high; 2 – low; 3 – on-going)

Ref. Section	Guidelines and actions	Responsible agent	Priority	Performance Indicator	Percentage completed or achieved / year				
					2003/2004	2004/2005	2005/2006	2006/2007	
4.3	Facilities and activities which conflict with nature-based recreational experiences will be restricted to the leased areas of the island.	QPWS GIRAC	3	All facilities and activities in RAM area provide, or support, nature-based recreation experiences					
4.3	QPWS will conduct a visitor survey to determine satisfaction with available facilities and activities. Findings will be used to review management guidelines and actions.	QPWS	1	Visitor survey conducted					
4.3	QPWS will prepare and implement a long term works program to maintain and upgrade existing recreation area facilities as required, the preparation of the works program will be undertaken in consultation with CCC and NR&M when the esplanade is part of the program.	QPWS	1	Existing facilities are considered satisfactory by visitors (through survey)					
4.3	The cap of 2240 visitors a day for commercial tourism operator access to the Recreation Area will be retained. QPWS, in conjunction with GBRMPA and in consultation with stakeholders and other interest groups, will apply the provisions of the Tourism in Protected Areas initiative in establishing an appropriate and sustainable tourism allocation policy. QPWS will monitor visitor perceptions through surveys to ensure that management provisions maintain the desired visitor experiences. Findings may be used to review limits of use.	QPWS GBRMPA	1 1 1	Cap of 2240 visitors/day retained. Allocation policy for commercial access developed and implemented. Visitor perceptions and experiences of Green Island Recreation Area are overall positive.					
4.3	Separate conflicting activities and restrict activities which are unreasonably obtrusive to visitors via the Reef Activities Plan (appendix D) and Cairns Area Plan of Management.	GIRAC	1	Conflict between existing activities is negligible					
4.3	QPWS in consultation with GIRAC, will develop a code of practice for vessels operating in the channel to minimise sediment disturbance.	QPWS GIRAC	1	Code of practice for sediment disturbance adopted					
4.3	CCC will contract a lifeguard service provider for Green Island on behalf of the RAM Board.	CCC	1	Life-guard employed					
4.3	GIRAC will ensure that visitor safety is addressed through interpretive and educational and other services and facilities.	QPWS GIRAC	3	Safety issues raised in GIRAC meetings are reflected in educational material					
4.3	GIRAC and QPWS will ensure that companies which hire out in-water recreation equipment develop a code of conduct to maintain a reasonable standard of supervision of their clients.	QPWS GIRAC	2	Code of conduct for beach hire adopted					
4.3	QPWS and Green Island Resort will investigate and implement the presentation of interpretive material in multilingual formats.	QPWS Resort	2	Multi-lingual interpretive material available					

Table 2: Green Island Recreation Area management plan implementation and monitoring details (continued)
 (Note: Priority 1 – high; 2 – low; 3 – on-going)

Ref. Section	Guidelines and actions	Responsible agent	Priority	Performance Indicator	Percentage completed or achieved / year				
					2003/2004	2004/2005	2005/2006	2006/2007	
4.3	QPWS will investigate the possibilities for further presentation of Indigenous cultural values of the site through personal interpretation by traditional owners.	QPWS Trad. Owners	2	Liaison with traditional owners complete. Culturally appropriate information program implemented by traditional owners					
4.4	Maintenance work at the seawall will be undertaken as required	QPWS	3	Integrity of seawall maintained					
4.4	Sand replenishment will continue to be undertaken at the sea wall as required.	QPWS	3	Sufficient sand is present at seawall to prevent under scouring					
4.4	QPWS will monitor sand dynamics in relation to the sea wall.	QPWS	3	Annual report of beach sediment dynamics					
4.4	QPWS will review recommendations of the QGHL study and advise the RAM Board on preferred options.	QPWS RAM Board	1	Options paper prepared; option adopted					
4.4	QPWS and GBRMPA will facilitate the control of COTS outbreaks at high use sites through the permit process	QPWS	1	Coral cover at high use sites maintained					
4.4	QPWS will monitor the status of COTS and determine the impacts to coral regeneration and recruitment.	QPWS	3	Status report completed					
4.4	The Queensland turtle research program will continue to conduct turtle monitoring of green and hawksbill turtles.	QPWS	3	Research report prepared reflects Green Island turtle study.					
4.4	The RAM Board will provide ongoing support to the bio-electrical impedance assessment turtle study.		3	Level of funding made available					
4.5	Yearly operational plans will be prepared in accordance with the set priorities of this management plan.	QPWS	3	Extent to which yearly operational plans reflect management guidelines and actions					
4.5	Implementation of proposed guidelines and actions will be monitored on an annual basis.	GIRAC	3	Annual review of management actions					
4.5	QPWS will commission an update of the Green Island Information Review (Baxter 1990).	GIRAC	2	Green Island Information Review update completed					

5. Management plan - Green Island National Park

Green Island National Park will be managed in accordance with the vision statement and management objectives indicated previously in sections 1.4 and 1.5, to conserve the area's key natural, cultural, educational and scientific values (section 3). The recreation area, national park and surrounding marine parks will be managed in a coordinated and complementary manner.

The Nature Conservation Act 1992 requires a final management plan for a national park to include management outcomes for the protection, presentation and use of the area, and policies, guidelines and actions to achieve these outcomes. The sections in the table below fulfil this requirement. They indicate the desired outcomes to be achieved in the management of the national park, and the strategies (proposed policies, guidelines and actions) that will be used to achieve these outcomes.

The table is structured in the following way:

- **Column 1** provides information on what is required to be managed, that is the current situation
- **Column 2** states the what the situation should be like in the future, that is the desired outcomes
- **Column 3** refers to means by which the desired outcomes can be achieved, that is the proposed policies, guidelines and actions.

5.1 Management strategies

Current situation	Desired outcomes	Proposed policies, guidelines and actions
<p>Native plants The island is fringed by a typical strand vegetation community (i.e. beach she-oak, <i>Casuarina equisetifolia</i>, and beach almond, <i>Terminalia arenicola</i>). This fringe of vegetation acts as a natural barrier to salt and winds.</p> <p>A detailed vegetation list was prepared for the island in May 1993.</p> <p>The DCP provides strict conditions on the introduction of exotic plants on to the lease areas.</p> <p>Human impact on the vegetation has been largely minimised due to the construction of raised wooden boardwalks.</p>	<p>The extent and integrity of vegetation cover is maintained.</p> <p>The plant species diversity is monitored for the island.</p> <p>Disturbed areas are rehabilitated where appropriate.</p> <p>Visitor impact on vegetation is minimised by management controls</p>	<ul style="list-style-type: none"> • Regular assessments of the status of the island's flora will be undertaken to determine whether present management is appropriate. Where necessary, findings will be used to amend inappropriate management practices. • Areas subject to natural foreshore erosion will not be revegetated unless the erosion threatens facilities. • Visitor access to the national park continues to be restricted to the raised boardwalk in forested areas.
<p>Native animals The migratory pied imperial pigeon nests on the island between October and March. The level of population data of this species at Green Island is limited.</p> <p>The beach stone curlew (listed as vulnerable) inhabits the island.</p> <p>A small colony of spectacled fruit bats occurs on the island.</p>	<p>Breeding pied imperial pigeons are not disturbed by tourism.</p> <p>A more complete knowledge of island fauna is gained to assess potential impacts of tourism and recreation.</p>	<ul style="list-style-type: none"> • Regular counts of pied imperial pigeon are undertaken throughout the breeding season. • Conduct baseline fauna surveys to identify faunal species diversity. • Visitor access to the national park continues to be restricted to the raised boardwalk in forested areas.
<p>Introduced plants and animals The most common weeds on the island are Mossman River grass (<i>Cenchrus echinatus</i>), leucaena (<i>Leucaena leucocephala</i>), and mother-in-laws tongue (<i>Sansevieria trifasciata</i>). The coconut (<i>Cocos nucifera</i>) also occurs in large numbers on the island.</p> <p>Regular removal of weeds is undertaken. A code of best practice for contractors has been prepared and utilised.</p> <p>Green Island has a history of infestation by the common rat (<i>Rattus rattus</i>). Other exotic fauna include the cane toad (<i>Bufo marinus</i>) and the European sparrow. A control program for rats and problem bird species is conducted periodically in conjunction with leaseholders.</p>	<p>Pest species' populations are controlled or eradicated.</p> <p>No new introduced species become established in the park.</p> <p>A program to regularly monitor and control the distribution and abundance of weed and pest species is established.</p>	<ul style="list-style-type: none"> • Develop and implement a weed management program. • Liaise with other stakeholders to co-ordinate weed control. • Develop and implement a rat and problem-bird management program. • Liaise with other stakeholders to co-ordinate animal pest control.

Current situation	Desired outcomes	Proposed policies, guidelines and actions
<p>Landscape, soil and catchment protection No groundwater is permitted to be extracted from the island.</p> <p>All waste water is pumped to the tertiary treatment system. Effluent re-use typically accounts for approximately 40% of the total water usage on the island.</p> <p>Water quality is monitored in accordance with licence requirements.</p>	<p>Activities which degrade the landscape or physical integrity of the island and reef do not occur.</p> <p>Visual intrusion of existing or future developments is minimised.</p>	<ul style="list-style-type: none"> • Groundwater extraction will not be permitted. • Effluent discharge will be monitored for compliance with standards • Where necessary, fencing will be constructed to minimise damage to foreshore vegetation by park visitors. • Visually obtrusive structures will be screened by vegetation. • Maintenance work on existing park infrastructure will be undertaken in a way that minimises disturbance to surrounding vegetation.
<p>Cultural heritage Green Island and its associated reef are part of the traditional sea country of the <i>Gungandji</i> and the <i>Mandingalbay Yidinji</i> Aboriginal people.</p> <p>Green Island has European historical association, having been visited by early explorers and used by the beche-de-mer industry. It has been an important holiday destination since the late nineteenth century, its significance recognised through successive protection orders.</p> <p>While some aspects of the Indigenous and European cultural heritage are documented, the cultural significance of places has not been formally assessed.</p>	<p>Significant elements of cultural resources are identified and conserved according to current best practice.</p> <p>Indigenous cultural places are protected and managed in accord with the wishes of identified custodians of those sites.</p> <p>Suitable cultural heritage places are presented to visitors.</p>	<ul style="list-style-type: none"> • A statement of significance identifying the cultural significance of Green Island and culturally significant places at Green Island should will be prepared. • Any identified significant cultural heritage sites will be protected from wilful or inadvertent damage. • Traditional custodians will be consulted to establish principles and guidelines for co-operative management of cultural heritage issues.
<p>Recreation and tourism Green Island has very high levels of recreational and commercial tourism use.</p> <p>A boardwalk provides access to the national park from the resort lease. There are frequent shaded seating areas and access points to the beach from the boardwalk.</p>	<p>Visitor access to the national park is limited to the existing boardwalk and other facilities.</p> <p>Visitor facilities in the national park are adequate appropriate for a nature-based experience.</p>	<ul style="list-style-type: none"> • Maintain access to national park boardwalk and facilities for all visitors. • Maintain visitor facilities to departmental standards. • Recreation constraints are detailed in Appendix E and may be reviewed within the life of the plan
<p>Education and interpretation A visitor information pamphlet is available. A QPWS ranger is available to provide interpretation services. Interpretation is also provided by the Green Island Resort, Marineland Melanesia and other commercial operations. Traditional owners have cultural heritage information some of which may be culturally sensitive.</p>	<p>Public information about the history, natural and cultural assets of the island is comprehensive and adequate.</p> <p>Traditional owners of the island are involved in all facets of educational and interpretive programs as appropriate.</p>	<ul style="list-style-type: none"> • On-site interpretation will be of a non-intrusive nature to blend into the natural setting of the island. • Indigenous involvement in presenting interpretation of the island and reef will be sought. • Incorporate appropriately researched information on Indigenous and non-Indigenous cultural heritage into interpretation programs where as appropriate. • Information will be conveyed in a manner suitable for multi-cultural nature of visitors (e.g. internationally accepted symbols and translations to Asian and European languages where possible).

Current situation	Desired outcomes	Proposed policies, guidelines and actions
<p>Native title Representatives of the traditional owners were selected for a works program by the Gungandji Aboriginal Corporation and QPWS to enhance protected area management skills within the indigenous community. This program model did not meet Gungandji's or QPWS needs and an alternative means of traditional owner involvement in park management is recommended.</p>	<p>Traditional custodians are involved in the management of the National Park and Marine Park.</p>	<ul style="list-style-type: none"> • QPWS will involve traditional owners in national park management.
<p>Complementary management of adjoining areas The area below the highest astronomical tide surrounding Green Island is managed under State Marine Parks legislation. The area below low water mark surrounding the island is managed under Great Barrier Reef Marine Park legislation. Most of the island and reef lies within the Green Island Recreation Area.</p>	<p>The national park, recreation area and marine parks are managed under their respective legislation in a co-ordinated and complementary manner.</p>	<ul style="list-style-type: none"> • QPWS will liaise with GIRAC, other agencies, stakeholders and the community to promote coordinated and complementary management, particular with regard to: <ul style="list-style-type: none"> • development and revision of policies and zoning and management plans; • visitor management and permit issue arrangements; and • public contact and information.
<p>Plan implementation and monitoring A strategy is required which reviews both the adherence of management to guidelines and policies and the extent of achieving actions identified in this plan; and which identifies how effective policies, guidelines and actions have been in achieving set objectives.</p> <p>Performance indicators may need to be identified to allow for monitoring of plan implementation and to review the effectiveness of management strategies.</p>	<p>Policies, guidelines and actions identified in this management plan are successfully implemented and monitored for their effectiveness in achieving the desired outcomes.</p>	<ul style="list-style-type: none"> • Yearly operational plans will be prepared in accordance with this management plan • Plan and implement a long-term works program in consultation with GIRAC to maintain and upgrade existing structures and surfaces as required. • Implementation of proposed policies, guidelines and actions will be monitored on an annual basis. • Performance indicators identify plan implementation and effectiveness of management strategies.

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Figures and tables

Figure 1. Location and jurisdictional boundaries of Green Island Recreation Area

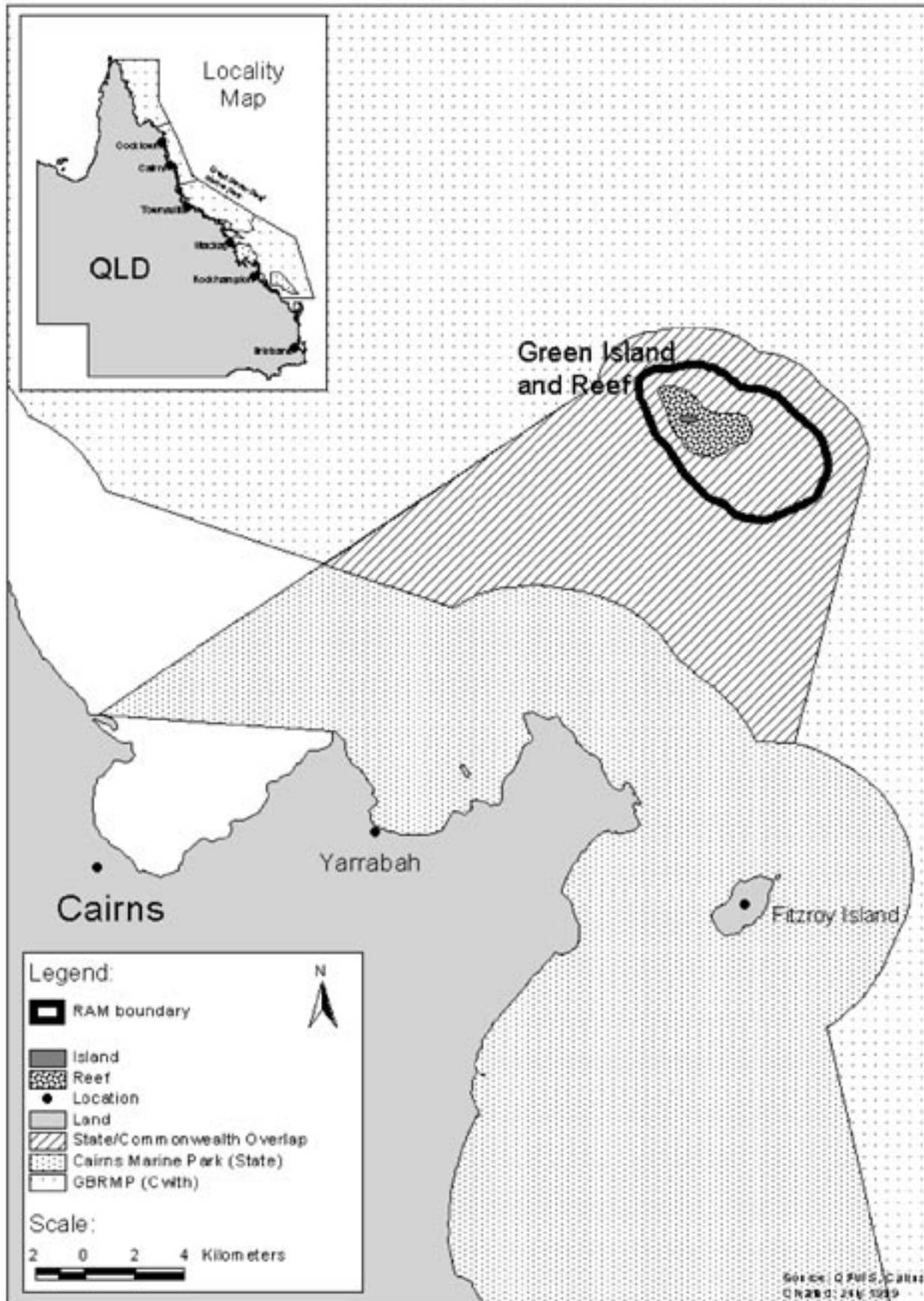


Figure 2. Green Island tenure map

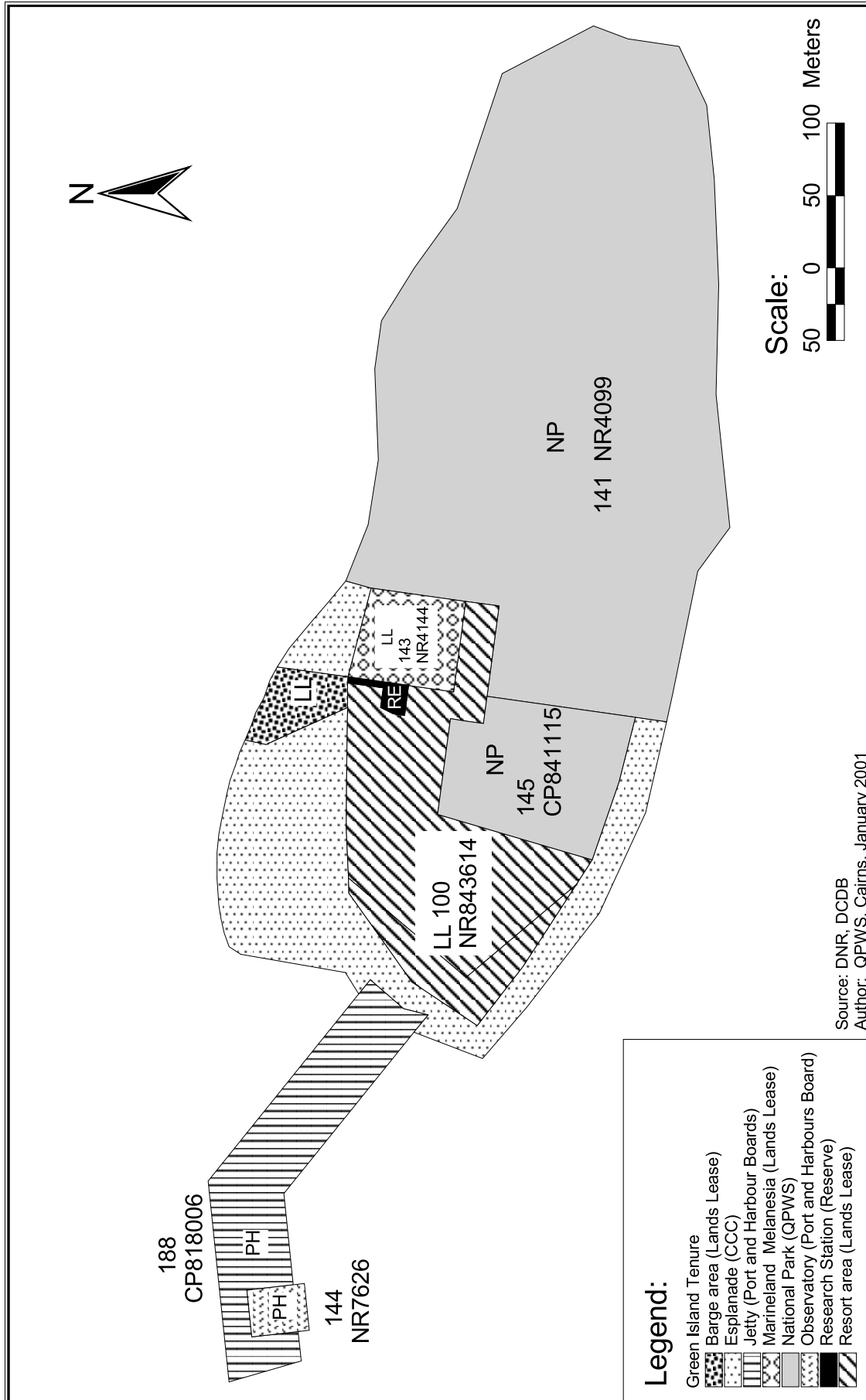


Figure 3. Cairns area plan of management localities of Green Island

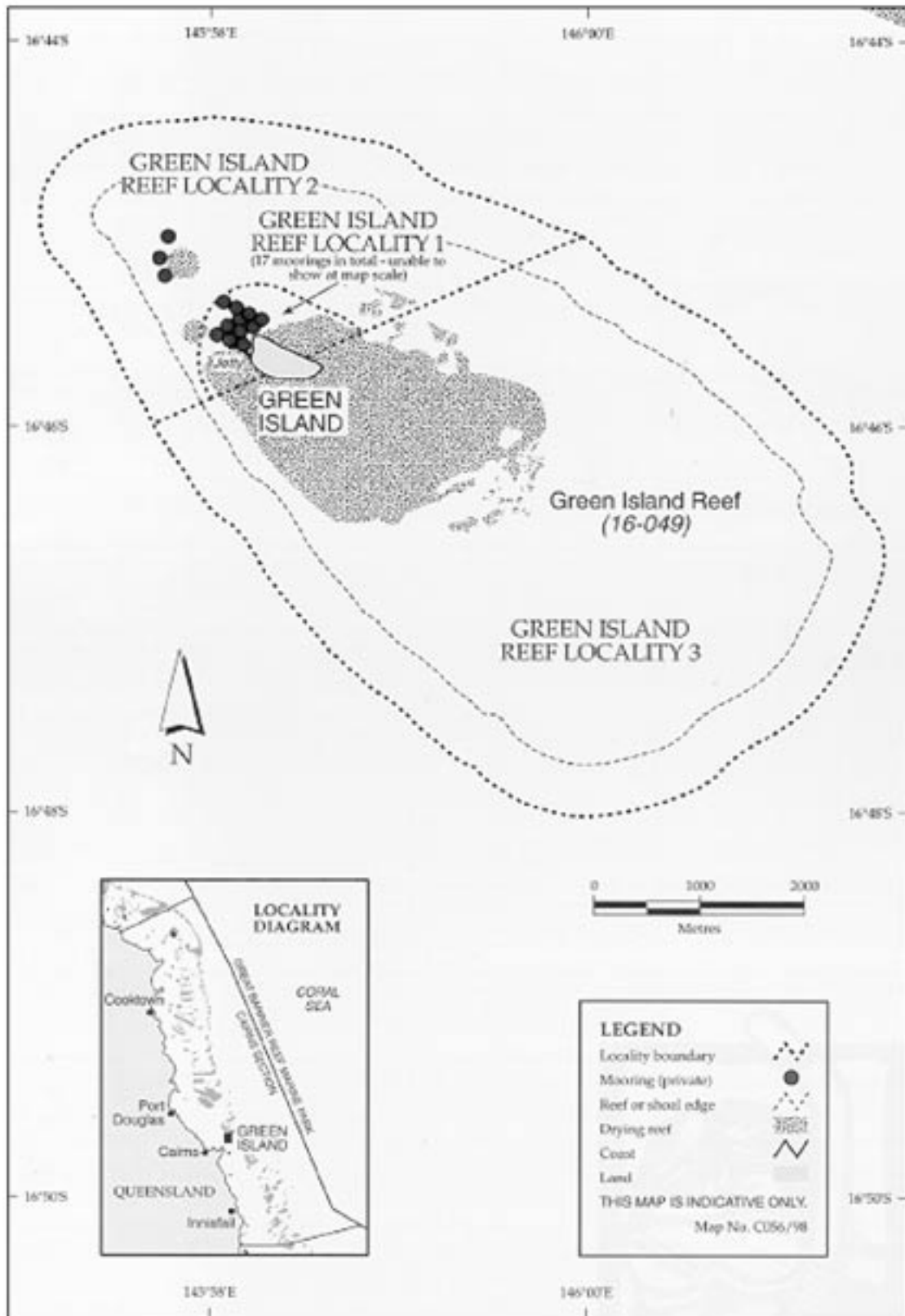
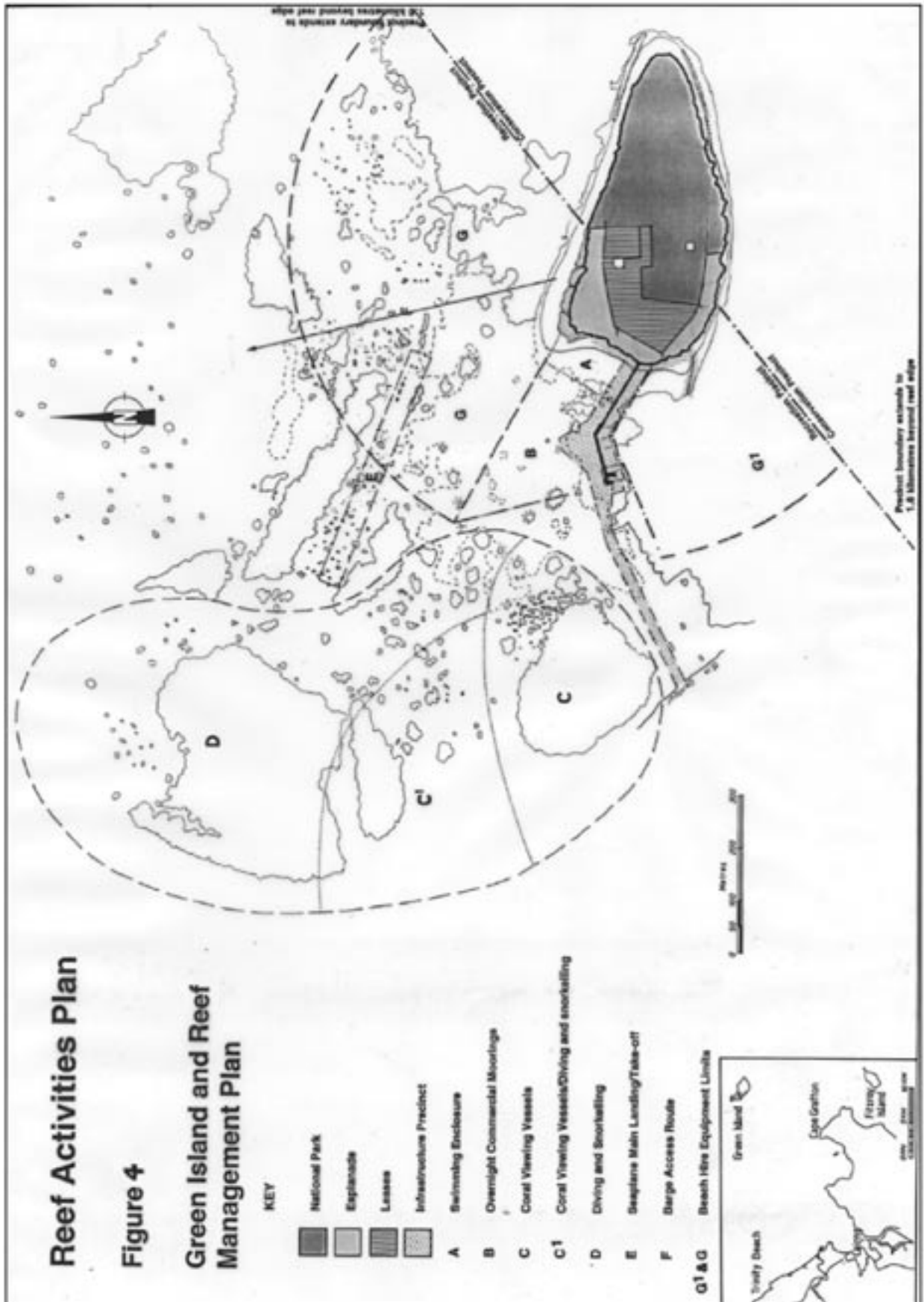


Figure 4. Reef activities plan



Appendix A

Beach Hire Code of Practice

Intent of code

A Code of Practice jointly developed by the operator and Queensland Parks and Wildlife Service (QPWS) to safeguard the natural environment and continued operation of the tourism operation.

Approvals

Approvals to operate a beach hire operation at the site are required under the following legislation:

- Great Barrier Reef Marine Park Act 1975 (Cwth).
- Marine Parks Act 1982 (Qld).
- Recreation Areas Management Act 1988 (Qld).
- Local Government Act 1993 (Qld)

Beach hire operation location

The precise location of the beach hire storage and trading shelters and equipment display areas is subject to approval by the QPWS Ranger-in-charge.

Design criteria for equipment storage and trading shelters are as follows:

- Dimensions not to exceed 6.0 metres in length or width and 2.5 metres in height.
- Moveable structure.
- Unobtrusive colour selection.
- Built in accordance with Cairns City Council Development Control Plan.

Signage

One beach hire sign is permitted for use in, or adjacent to, each equipment display and trading site.

- Design criteria for signs are as follows:
- Dimensions not to exceed 1.0 metres in height and 2.0 metres in width.
- Portable design.
- Unobtrusive colour selection.

Equipment use

The use of hire equipment is restricted to within the 300-metre coastal line and to areas "G" and "G1" with the exception of snorkelling equipment, which may also be used in area "A" (see figure 4).

Equipment type and style

Equipment type and style must be in keeping with the natural character and amenity of the site.

Craft which may be difficult for novice users to control in congested waters are not allowed.

Note: The code may be reviewed from time to time to reflect changes in management practices, and to maintain consistency with relevant legislation and statutory instruments.

Appendix B

Helicopter Operations Code of Practice

Intent of code

A code of practice jointly developed by the operator and the QPWS to safeguard the natural environment and continued operation of the tourism operation.

Relevant permissions

Approvals to commercially operate a helicopter to the site are required under the following legislation:

- Great Barrier Reef Marine Park Act 1975 (Cwth).
- Marine Parks Act 1982 (Qld).
- Recreation Areas Management Act 1988 (Qld).

Operational guidelines

- A maximum of five (5) visits a day for passenger transfers are allowed to the helicopter landing site (HLS).
- Movements to and from the HLS must be conducted by the most direct seaward path to the south of the concrete panel groyne.
- Island overflights or circuits are not allowed.
- Scenic flights over the reef below 1500 feet are not allowed.
- Use of the HLS must only occur during daylight hours except for emergency evacuations.

Noise containment measures

- The approach path to the HLS should be from the highest practical altitude.
- Adopt low noise speed and descent ratings as per manufacturer's guidelines for specific helicopters.
- Ground idling and hovering over the HLS should be kept to a minimum.
- Avoid operating the helicopter in "blade slap" zones according to manufacturer's guidelines for specific helicopters.
- Avoid sharp manoeuvres and steep turns and maintain gradual and smooth control inputs.
- Preference shall be given to use of helicopters with quieter turbine-powered engines instead of piston powered engines.

Note: The code may be reviewed from time to time to reflect changes in management practices, and to maintain consistency with relevant legislation and statutory instruments.

Appendix C

Seaplane Operations Code of Practice

Intent of code

A code of practice jointly developed by the operator and the Queensland Parks and Wildlife Service to safeguard the natural environment and continued operation of the tourism operation.

Relevant permissions

Approvals to commercially operate a seaplane to the site are required under the following legislation:

- Great Barrier Reef Marine Park Act 1975 (Cwth).
- Marine Parks Act 1982 (Qld).
- Recreation Areas Management Act 1988 (Qld).

Operational guidelines

- A maximum of five (5) visits a day are allowed to the site.
- Landings and take-offs must only occur in the seaplane landing site.
- Beach landings are not allowed except in emergency situations.
- Passenger transfers to and from the beach must only occur in a tender vessel while the seaplane is attached to a private mooring.
- Island overflights or circuits are not allowed.
- Use of the site must only occur during daylight hours except in emergency situations.

Noise containment measures

- Adopt low noise take-off and landing procedures.
- Avoid sharp manoeuvres and steep turns and maintain gradual and smooth control inputs.
- Preference shall be given to use of seaplanes with quieter turbine-powered engines instead of piston-powered engines.

Note: The code may be reviewed from time to time to reflect changes in management practices, and to maintain consistency with relevant legislation and statutory instruments.

Appendix D

Reef Activities Plan Provisions

Recreation precinct

This precinct includes the heavily used western, lagoonal portion of the reef and provides for intensive recreation and tourism use and non-manipulative scientific research (see figures 3 and 4; refer also to Cairns Area Plan of Management, GBRMPA 1998 (and as amended), for further detail).

Management guidelines

- Maximum group size of 60 people a vessel (including crew).
- A person must not knowingly, recklessly or negligently damage or anchor on coral.
- No anchoring within 50 metres of moorings except for CAPOM locality 1.
- No motorised water-sports or hovercraft.
- No pontoons.
- Private moorings limited to "No increase above the number permitted on 22 June 1998 " in locality 1.
- 15 private moorings allowed in locality 2 (outside coastal 500-metre line).
- Overnight private moorings are restricted to area "B".
- Coral viewing vessel operations are restricted to area "C".
- Diving and snorkelling operations mostly restricted to area "D".
- Barge beach landings are restricted to route "F".
- Beach hire equipment use is restricted within the 300-metre coastal line and to areas G, G1 and A (see appendix A).
- Helicopter operations are restricted to 5 landings and take-offs a day at the designated helicopter landing site H (see appendix B).
- Eligible seaplane operations are restricted to five landings and take-offs a day in the designated seaplane landing/take-off area during normal weather conditions E (see appendix C).
- Non-manipulative scientific research allowed.
- No traditional fishing and hunting in localities 1 and 2.

Conservation precinct

This precinct includes the less frequently used eastern portion of the reef and provides for low key recreation, tourism, traditional fishing and hunting, and scientific research (refer to Cairns Area Plan of Management, GBRMPA 2002, for further detail).

Management guidelines

- Maximum group size of 15 people per vessel (including crew).
- A person must not knowingly, recklessly or negligently damage or anchor on coral.
- No motorised water-sports or hovercraft.
- No moorings.
- No pontoons.
- Traditional fishing and hunting allowed (not within 200 metres of the island).
- Manipulative scientific research allowed (within specified limits subject to permit).

Appendix E

Activities restricted to safeguard the natural amenity of Green Island and reef

- Restrictions would not apply in emergencies relating to injury or risk of injury, serious environmental threat, or safety of a vessel or other craft;
- Other activities which are inconsistent with the management purposes or objectives may be restricted also.

Activities	Restrictions	Legislation
Helicopter, seaplane and ultralight aircraft operation	Generally prohibited within 500 metres from the reef edge except for permitted tourist programs and emergency evacuation by helicopter from SW groyne	Area to be Avoided by Aircraft under Zoning Plan provisions
Jet-skiing, water-skiing, water scooters, para-gliding and other noisy water sports	Unacceptable activities owing to disturbance to natural amenity and safety risks. Speed limit of 6 knots to be imposed	Under CAPOM
Boat navigation and anchoring	Excluded from buoyed swimming area	Special management area as above, to restrict all vessel navigation in buoyed swimming area
SNUBA & SCUBA-dive training programs and introductory dives	Activity to be restricted to specific sites in accordance with Marine Activities Plan and group size kept to a minimum	Marine Parks, tourist program permit conditions
Organised fish feeding	Limited to permitted operations for reef-viewing, diving or snorkelling	Marine Park permit conditions
Overnight camping on the island	Prohibited	Nature Conservation Act and Regulations
Erection of shelter canopy, tent, etc.	Subject to permit; otherwise limited to temporary, free-standing beach umbrellas or similar structures	DCP, Nature Conservation Act and Regulations
Possession of spear-guns or fishing tackle	Applies to all vessels where equipment must be stowed securely throughout time on site	Zoning Plan provisions
Lighting fires	Prohibited	Nature Conservation Act and Regulations
Littering	Prohibited	Nature Conservation Act and Regulations
Use of loud-hailers or noisy equipment, compressors, generators and any other equipment which in the assessment of the responsible agency is inconsistent with the management objectives	Prohibited	Lease conditions under the <i>Land Act 1994</i>